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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,047	10/01/2004	Sadaaki Hirai	121324	8336
25944	7590	06/18/2007		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER BALDWIN, GORDON	
			ART UNIT 1775	PAPER NUMBER
			MAIL DATE 06/18/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/510,047	Applicant(s) HIRAI ET AL.	
	Examiner Gordon R. Baldwin	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 21-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21, 22, 25, 26, 29, 31, 33, 35, 37 and 39 is/are allowed.
- 6) ☒ Claim(s) 23, 24, 27, 28, 30, 32, 34, 36, 38 and 40 is/are rejected.
- 7) ☒ Claim(s) 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Objections***

**Claim 21** is objected to because of the following informalities: In line 6 of claim 21, the phrase, "inflow end part side" and "outflow end part side" are not mentioned earlier in the claim language. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 23, 24, 27, 28, 30, 32, 34, 36, 38 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito (U.S. Pub. No. 2001/0003728).**

**Consider claims 23, 24, 32, 34, 38,** Ito teaches a circular (Fig. 1) cordierite (ceramic) honeycomb structure (Para. 38-39) used to purify exhaust gases (of automobiles) (Para. 37) which has teaches in figure 2, a peripheral wall 12 as well as an outer peripheral section 112 of said lattice walls 11 located in the vicinity of said peripheral wall contain a densified portion of smaller porosity than that of an inner peripheral portion 111 of said lattice walls 11 which is located inside said outer peripheral portion 112. (Para. 38 and claims 1 and 4) Additionally, Ito also teaches the addition of titanium to the honeycomb structural body. (Para. 0025) However, Ito does

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not specifically teach the porosity per unit volume increasing at a rate of 0.2%/mm or 0.1 %/ mm from the inner to the outer portion of the honeycomb structure. However, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the rate of increase of porosity for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

**Consider claims 27 and 28**, the adjustment of the porosity per unit volume of up to 150mm is 10-50% is considered to be obvious to one having ordinary skill in the art at the time of the invention to adjust the porosity percentage of a certain area for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

**Consider claim 30**, Ito teaches that the lattice walls (11) can have a thickness of 60 micrometers. (Para. 47)

**Consider claim 36**, while Ito only teaches the section of the cell perpendicular to the flow being in a circular shape (Fig. 1), the changing of the shape to a triangle, tetragon or hexagon is only considered to relate to ornamentation and is not shown to have a mechanical function and cannot patentably distinguish the claimed invention from the prior art. In re Seid, 161 F.2d 229, 73 USPQ 431 (CCPA 1947) Additionally, the shapes are also considered to be obvious to a person of ordinary skill in the art due to the shape being considered a mere design choice.

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**Consider claim 40**, Ito teaches that a catalyst component is supported by the ceramic honeycomb structural body, which is considered to include the outer peripheral surface of the outer wall and the partition walls. (Para. 33)

### ***Response to Arguments***

Applicant's arguments filed 3/16/2007 have been fully considered but they are not persuasive. Concerning the argument that Ito does not teach the claimed specific porosity per unit volume rate, since the adjusting of the rate is considered to be obvious for a person skilled in the art so as to be able to pinpoint an optimal range to give the best results in regard to strength and ability to function as a filter for exhaust emissions. As for the argument against the addition of a reinforcing agent, as stated by the applicant from the "related art" section of Ito, while Ito may state this, Ito also teaches that titanium may be added to the structural body of the honeycomb structure. Since Ito adds titanium to the honeycombs structure, Ito's teaching is considered to read upon the claims of the applicant.

### ***Allowable Subject Matter***

Claims 21, 22, 25, 26, 29, 31, 33, 35, 37, 39 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The reason for allowability over the prior art is that Ueda did not specifically disclose a gradually changing porosity, only a fortified inflow end with increased density, which is considered to mean that it had lower porosity.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon R. Baldwin whose telephone number is (571)272-5166. The examiner can normally be reached on M-F 7:45-5:15.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GRB



JENNIFER C. MCNEIL  
SUPERVISORY PATENT EXAMINER

6/10/7